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Seeking togetherness: moving toward a comparative evaluation framework in an interdisciplinary DIY networking project

Short Paper

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ABSTRACT

There is renewed interest in community networks as a mechanism for local neighbourhoods to find their voice and maintain local ownership of knowledge. In a post-Snowden, big data, age of austerity there is both widespread questioning of what happens to public generated data shared over ‘free’ services such as Facebook, and also a renewed focus on self-provisioning where there are gaps in digital service provision. In this paper we introduce an EU funded collaborative project (‘MAZI’) that is exploring how Do-It-Yourself approaches to building community networks might foster social cohesion, knowledge sharing and sustainable living through four pilots across Europe. A key challenge is to develop a shared evaluation approach that will allow us to make sense of what we are learning across highly diverse local situations and disciplinary approaches. In this paper we describe our initial approaches and the challenges we face.¹

CCS CONCEPTS

• **Human-centred Computing** → **Collaborative and Social Computing** → Empirical studies in Collaborative and Social Computing

KEYWORDS

Community networking, evaluation, interdisciplinarity, participatory action

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1 INTRODUCTION

‘Do It Yourself’ (DIY) networking is the setting up and managing of information communication technology tools and networks by the people who will use the resulting systems. There is a long tradition of citizens and communities building and maintaining their own telecommunications networks [7], though this term predominately refers to systems that either complement or offer alternatives to the Internet.

DIY networks have received increased recent interest as means of supporting neighborhoods to overcome local challenges, foster social cohesion and share knowledge. Edward’s Snowden’s revelations on government data collection, increased awareness of the commercial mining of data from social media services, and recent legislation (e.g. the UK Investigatory Powers Act 2016) have brought data privacy concerns to the attention of a wider public audience. Digital service provision, both in terms of internet access and available services remains stratified: while many people have internet-capable smartphones, and broadband is more widely available than a decade ago, there are still internet notspots in urban as well as rural areas. More significantly in the economic global downturn, there are still significant financial barriers to full participation. Alternative approaches to self-provision, for reasons of philosophy, autonomy, or necessity are becoming more attractive. New alignments of communities, researchers, and activists are exploring how community networking might support neighborhood formation and development. In the face of new challenges and long-standing problems these are remaining close to the original ideal of the community informatics to “[transfer] responsibility and authority to communities and away from central institutions” [8,p.79].

The European Union funded research project MAZI (in Greek: “together”) has brought together a group of academics, practitioners, artists and activists to explore how community-led ICT networking, presented as DIY networking, might be applied in local neighborhoods to foster community and solve local challenges. The goal of the project is to develop a socio-technical networking toolkit. This will consist of software, hardware, guides and examples to enable local groups to develop and customize their own community networks to resolve local issues. Project partners come from a range of practitioner backgrounds and academic disciplines. A key goal is to develop a shared evaluation

approach and suitable ways of gathering feedback to help plan, assess our progress and share lessons learned across the different case studies. In this paper we describe progress made so far and challenges encountered.

The following sections describe the context in more detail, the challenge of developing a comparative evaluation framework, the dynamics of our participatory action research approach, and reflections on the challenges encountered so far and future directions within the project.

2 THE MAZI PROJECT CONTEXT

MAZI (“A DIY Networking toolkit for location-based collective awareness”) is a three year European Union funded project running from 2016-2018, as part of the ‘Collective Awareness Platforms for Sustainability and Social Innovation’ funding. This stream seeks to “[foster] collaborative solutions based on networks (of people, of ideas, of sensors), enabling new forms of digital social innovation” [5], emphasizing ‘grassroots’ approaches and diverse range of participants.

MAZI has brought together nine organisations across Europe including universities, community activists, community networkers and artists from a range of disciplines: computer networking, urban planning, community informatics, interdisciplinary studies and community engagement. MAZI aims to develop both a socio-technical community networking toolkit, and a transdisciplinary research framework, focused through work carried out in four pilot studies. The pilots can be summarized as follows:

Pilot 1: The Design Research Lab of Berlin University of the Arts and Common Grounds e.V.’s collective learning initiative ‘Neighbourhood Academy’ are exploring and aiming to create local and global neighbourhoods through collective learning, sharing knowledge and experiences within the scope of critical urban practice, in the face of urban gentrification in the Kreuzberg district of Berlin.

Pilot 2: The Open University (UK) and SPC (a DIY networking access and training community organization) are exploring how a long standing wireless community network, OWN, may be revitalized and enhanced to bring together communities facing gentrification and environmental challenges along an urban watercourse, Deptford Creek, in London, and support their information exchange, discourse, and knowledge building.

Pilot 3: Nethood, and INURA Zurich Institute, are exploring how technology can further support existing democratic and participatory processes within a large housing cooperative, Kraftwerk1, in Zurich, through playful interactions for collective awareness and an external knowledge transfer project for self-reflection and engagement.

Pilot 4: Edinburgh Napier University and UnMonastery are investigating how temporary communities of strangers can live and work together based on a monastic model, and working alongside local communities to contribute towards the identification and dissolution of local social challenges, currently in Kokkinopilos, Greece.

Each pilot is exploring how local networked technologies might help address local sustainability challenges viewed through four framings: contact (facilitation of exchanges between strangers in physical proximity); information (sharing of common interests in a one-to-many fashion); discourse (public deliberations on topics of common interest); and knowledge (construction of agreed upon perspectives). The local sustainability challenges vary and are being elicited through a process of running community outreach and engagement activities. These bring together local actors and articulate concerns, and from these we can identify potential actions that may be supported through the MAZI toolkit.

Each of our pilots represents a different context, which influences the extent activities can be designed to reflect the framings of sustainability challenges (contact; information; discourse; and knowledge). Moreover, the starting date for each pilot is intentionally staggered, meaning that their contribution towards the testing and development of the elements that make up the MAZI toolkit is slightly different. Common to all partners, however, is a belief in taking a participatory action research approach, though this is interpreted through the lens of the variety of theoretical underpinnings that each domain brings. The following section describes our initial steps towards developing a comparative evaluation framework.

3 TOWARDS AN EVALUATION FRAMEWORK

Evaluation is the careful assessment of the merit, worth and/or value that interventions have [9]. Evaluation should go beyond considering not only a project’s planned goals and objectives but also to examine unintended impacts [16]. It should be considered from the outset (‘upstream’) in the planning stages of work and during projects and not only as a reflection process towards the end of a project [6]. The absence of (or inappropriate) evaluation criteria, methods of data collection, techniques of analysis and types of knowledge will act as barriers and reduce the likelihood of evidencing impact (see Fig 1).

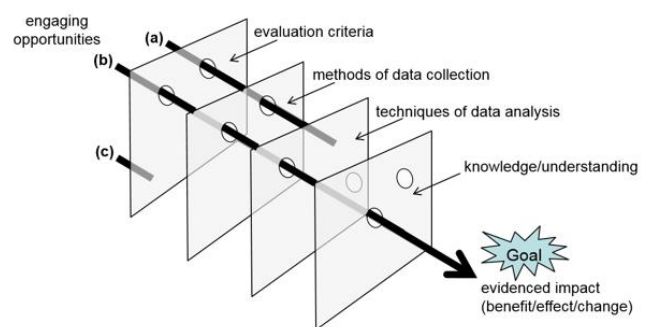


Figure 1: Barriers to evidencing impact in research projects (adapted from Reason 2000 [15])

Fig. 1 illustrates the importance of ensuring our pilots engage in upstream planning. Understanding the relative types of

knowledge underpinning potential formative and summative impacts (benefits, effects, and change occurring due to the intervention) ensures these can be evidenced.

Causal attribution is at the heart of this approach because we intend to increase people's agency and choice. Limited access and resources, however, prohibit the use of control groups to gather counter-factual evidence. As such, we are relying on a 'phased-in' approach (common in health research [3]), where each pilot's start is staggered. This alleviates ethical concerns about knowingly denying some the benefit of participating. It ensures everyone eventually gets the opportunity to engage and those that have to wait will benefit from the experience of interacting with an updated improved version of the toolkit.

To ensure the evaluation framework is both sensitive to differences in disciplinary approaches and informative enough to help partners' select appropriate measures of success for pilot-level evaluation, we are using a series of semi-structured interviews and focus groups to be held with partners throughout the project (e.g. to learn about their measures of success and share advice). To ensure the framework is flexible enough to bridge the divide between the complexities and nuances that characterize each pilot's context, we are carrying out a series of comparative case studies investigating the relative influence that context and interventions have on outcomes. We are drawing inspiration from literature (e.g. [13 & 4]) and building on approaches such as realistic evaluation [14] and activity theory [12] to help us analyse these case studies (e.g. [11 & 19]), so we can explore the relative similarities and differences between pilots' success.

Realistic evaluation is method neutral [14], so it can be used in conjunction with our interviews, focus groups and case studies. It starts and ends with theory about what interventions will yield particular outcomes in a particular context. It directs the analyses of evaluation data towards understanding the link between outcomes (e.g. uptake of DIY networking), mechanisms (e.g. social or psychological drivers that influence the reasoning of actors) and context (e.g. different stakeholders, processes, organisations, cultural & political conditions). Hence, this provides a structure for us to identify underlying 'generative causatives' that explain how (and why) particular contexts are conducive to triggering mechanisms to generate outcomes. By applying this logic of focusing on Context, Mechanism, Outcome (CMO) configurations to our analysis may help determine which pilot interventions either did (or did not) work because actors either did (or did not) make particular decisions in response to the interventions or the opportunities these provided. Moreover, it will allow us to address the central question of 'what works in what circumstances and for whom' as we refine our theory of how best to engage publics with DIY networking.

Similarly, Activity Theory promises a useful structure for disentangling the role factors such as 'rules', 'community' and 'divisions of labour' have on outcomes in the technological and semiotic space. By drawing upon McAndrew et al.'s extension of Engeström's activity triangle [12] we can also explore which transformations occur, e.g. between DIY networking & our pilot

communities, and activities being performed and the MAZI toolkit. By uncovering the contradictions and/or discrepancies both within and between pilots we will be able to gain insight into ways in which pilots might improve their promotion of DIY networking.

A series of ways of gaining feedback have been identified that provide opportunities for conversation and reflection. The following section outlines those we have employed to engage pilot teams in the development of this framework.

4 MEANS OF ENGAGEMENT

The comparative evaluations framework is being constructed on a participatory design/action research platform, enabling partners' active engagement and two-way learning between the research and pilot partners [2 & 18]. This aids us as we move towards inter- and transdisciplinary thinking that will support the resolution of challenges, as well as looking back to see what did and didn't work. Fig 2 illustrates the dynamic structure of how we are currently engaging partners and external stakeholders.

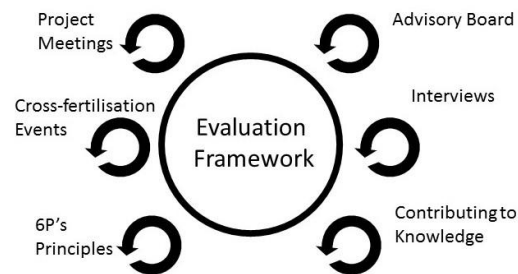


Figure 2: Mechanisms to support the development of an evaluation framework

We are in the initial stages of our three year project, and progressively moving through the plan, act, observe and reflect stages of a participatory action research approach. Currently we are moving from the planning and acting stage to the initial observing stage. Our initial approach has been to adopt a lightweight approach to enable initial framing and steps towards interdisciplinary thinking from the different partners. The most effective tool to date has been the adoption of the 6P's – six principles of engaged research [10]. These were originally designed to help guide universities towards engaging publics with research and to move beyond the 'deficit model' of science communication (where more communication is assumed to solve the problem). The 6P's offer a more reflective model of ensuring researchers engage in an ongoing process of thoughtful practice. We have used this approach to guide pilots towards report on:

'Preparedness': identifying local contexts, understanding of the challenges to be faced, the researchers' preparations for dealing with these challenges.

'Politics': understanding the local social and political contexts in which the research would be carried out.

'People': identifying the people that will be involved or affected by the work: the researchers, the community partners with whom we engaged, other community participants, others affected by the work.

'Purposes': clarifying the aims and objectives of the research from the perspective of MAZI, the participants involved and other stakeholders.

'Processes': pinning down the approach, methods and techniques that would be followed by the research team

'Performances': considering what was found and the extent to which this met the objectives of the research.

5 CONCLUSION

In this paper we have discussed a complex, interdisciplinary project that has the challenge of bridging many disciplines and contexts to draw together an understanding of the knowledge gained. The ultimate goal of the project is to create a community networking DIY toolkit, which will be informed and improved by a shared evaluation framework.

The building of interdisciplinary knowledge is a key aspect of our work. The identification of appropriate 'boundary objects' [17] has enabled debate both within the project consortium but also with engaged groups: what do we mean by 'Do', 'It' and 'Yourself', and what does it mean in the context of self-provisioning of network services? Furthermore, to quote Gunnar Karlsson "Why DIY?" [1].

First prototypes have provided a concrete focus to engagement activities: something tangible that can be handled, explored, and interrogated. At the same time, we recognize the need to avoid restricting free-ranging exploratory conversations led by the communities themselves in their articulation of local concerns to technologically deterministic discussion of equipment capabilities.

The development of the comparative evaluation framework is being designed to evaluate pilots' relative success and challenges; to show how success is influenced by a wide range of circumstances and local needs. It needs to evolve into a state where it ensures pilots have a sense of ownership and engage with the tasks and enable truly interdisciplinary interactions: seeking togetherness in our complex, collaborative project. Identifying ways of gathering feedback to enable comparative evaluation of the pilots has been a highly challenging task given the complexity of the project. It is our ambition that this will force us "to revise some of our own approaches and assumptions, including rethinking who are the stakeholders of our work, and how our work should be evaluated" (C&T2017 Call For Papers).

We have introduced a number of lightweight ways of getting feedback to initiate the process, and these are aspects of a larger framework that is under development. In these initial stages adhering to the 6Ps has meant that have we actively sought to involve multiple stakeholder perspectives, engaging communities as equal partners by considering how the research is likely to impact our community partners.

Another important challenge is the need to build a common vocabulary and understanding around shared terminologies. This is not a simple task because each partner brings with them

practices, ways of seeing the world, and terminologies that have to be bridged to enable meaningful and fruitful interactions. For example, while we all consider 'participatory research' as a key element of our approaches, this is interpreted in a range of ways.

As the project progresses we will draw upon the wider literature to inform the development of our framework. Eventually we hope the final framework will give future users of the MAZI DIY toolkit the ability to see how effective their deployment of socio-technical systems have been for supporting local communities in overcoming neighborhood challenges.

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